
Current Status of Health Promotion Activities in Four Midwest Cities

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Synopsis

Community-wide surveys were conducted in Winona and St. Cloud, MN, Eau Claire, WI, and Sioux Falls, SD, in 1986 and 1987 to determine the current status of the supply and demand of health promotion activities in nine categories. Supply and demand indicators were conceptualized and defined as program options (different activities in a coded list) and participation (registrations).

An annual inventory of all health promotion activities in each community was compiled from

interviews with providers of such activities. Interviews of probable community providers was followed by a nomination process to identify others. Providers at worksites were interviewed in a separate study with matching data endpoints.

Results show that exercise programs have the highest levels of options and participation in all four cities. On the supply side of total programs offered, there was similarity in rates among three of the cities, with only Winona offering more health promotion opportunities. There was similarity also in the areas of health where most programs are offered, favoring exercise, followed by the heart disease risk factor areas of screening, smoking cessation, and nutrition education. On the demand side of participation, there was similarity in total participation rates among three of the four cities with Sioux Falls showing substantially higher demand. Exercise showed the highest participation in all cities, but there was little similarity among the cities in ranking participation in the other areas of health promotion.

In the four cities combined, high levels of program options with low participation were characteristic of smoking cessation. In contrast, low levels of program options and high participation were shown in chemical dependency. Worksites are the main providers of health promotion programs for adults, with schools and colleges also major program providers. Educational organizations account for the largest percentage of total participation in health promotion.

WORLDWIDE, THE PAST DECADE has seen a growing movement towards health promotion and disease prevention with individual persons and organizations mounting an attack on obstacles to a healthy life (1). In the United States, the 1979 Surgeon General's report (2) and the 1990 Objectives for the Nation (3,4) set national goals for promoting health. In Europe, the World Health Organization initiated a healthy cities project in 35 European cities as part of the Health For All effort (5). In 1986, Canada hosted the First International Conference on Health Promotion and promulgated

its Ottawa Charter for Health Promotion for its citizens (6). These efforts around the world recognized the relationship between healthy lifestyle and disease prevention, and they specified policy goals to enhance healthy lifestyles and ensure healthy living conditions for the public.

Currently, the community is emerging as the setting of choice for developing health promotion programs (7,8) because, on a practical level, the city is an ongoing administrative unit that has political authority and resources to implement programs (9). Furthermore, people identify themselves

with geographic areas as citizens and residents, and these facts allow grass roots involvement in health promotion planning and delivery of services. In fact, new resources for assisting communities in planning to reach health promotion goals are now available. The Center for Disease Control's protocol, "Planned Approach To Community Health" (PATCH) (10), the new Model Standards workbook (11), the "Minnesota Guide for Promoting Health" (12), and the Kaiser Foundation's Health Promotion Resource Centers, based in Menlo Park, CA, and now working in western and southern States, are all efforts to assist communities in organizing and developing healthy lifestyle programs. All of these programs have incorporated some of the principles of community development, emphasizing local agenda setting, organizational cooperation, and local control. They are rooted in democratic values and encourage individual, voluntary participation in community programs that try to maximize individual efforts to lead healthier lifestyles. Health professionals and medical systems are important in facilitating this new public health movement, but they do not control it.

Development of Indicators

Progress toward healthy outcomes for individual persons has been summarized in many places (13-17), but progress on a community-wide basis has rarely been assessed (18) and is particularly lacking in health promotion. One reason is that conceptually there is a lack of health promotion indicators to assess current program levels or to evaluate health interventions. Abelin (19) and Kar and coworkers (20) have called attention to this problem, and a 1988 issue of the journal, *Health Promotion*, was devoted to it.

In this paper, we report the findings of a survey of health promotion activities using a Community Health Promotion Survey (CHPS) technique suggested by Cohen and coworkers (21). The technique develops two indicators of the current status of service delivery. These indicators were conceptualized to measure the supply and the demand for health promotion in a community.

The supply indicator was defined as "Community Program Options," the number of different kinds of program activities provided in each area of health by all identified providers in a community. This indicator measured the supply of programs in terms of health promotion opportunities and alternatives available in all organizational settings in the community. A health promotion pro-

gram option existed when there was (a) an organizational setting and sponsorship, possibly shared among several organizations as co-sponsors, (b) a program name or separate identity as a specific organizationally mandated set of behaviors or practices, (c) a goal or objective, (d) resources allocated, and (e) designated staff responsible for development and implementation. Program options for health promotion take place outside the context of medical treatment or physicians' orders and are primarily preventive in character.

The demand indicator for health promotion activity in a community was defined as "Community Program Participation," the number of registrations in those program options where participation could be tallied—in classes, lectures, groups, incentives, contests, and screening programs. The participation indicator is an institutionally-bound measure of program demand and is dependent on what program options are available. It measures consumer response to available program options.

These two indicators were used to assess current levels of health promotion. They are measures of community effort expended rather than measures of health outcomes. Because they are cross-sectional, they allow a determination of which community sectors were most active in health promotion activities. Unfortunately, a trend or progress towards more healthy communities cannot be established in this study because it was applied at a single point in time.

Methods

A community-wide assessment of health promotion activity was conducted in four Midwest communities—Winona and St. Cloud, MN, Eau Claire, WI, and Sioux Falls, SD. Data collection for the two Minnesota communities focused on calendar year 1986 and for the two larger regional cities on calendar year 1987. The cities range in size from about 25,000 to 100,000 population and are regional service centers providing medical, professional, retail trade, and distribution services for a surrounding area. A summary of community characteristics is given in table 1 (22). The main difference among the communities is the larger proportion of older residents in Winona compared with the others. While we make no claims that these are "average" American cities, midwest cities have typically been used to characterize national trends (23-25). There were no comprehensive health promotion interventions in progress in any of the communities at the time of the study.

Table 1. Demographic profiles of four communities surveyed¹

Characteristics	Winona	St. Cloud	Eau Claire	Sioux Falls
Area population	² 31,023	² 76,372	³ 83,694	³ 95,200
Men per 100				
women	82.10	92.20	85.90	87.80
Median age (years)	27.10	24.50	26.00	28.40
Percent older than				
65	16.30	10.90	11.70	11.10
Birth rate ⁴	13.20	16.00	13.90	18.00
Death rate ⁴	10.90	7.20	8.00	7.40
Percent with less than high school graduation	35.00	25.90	22.70	22.90
Percent in workforce	47.20	50.00	48.60	52.40
Percent married with families	51.40	50.90	53.60	56.40

¹ Reference 22. ² Reference 28. ³ Reference 29. ⁴ Per 100,000 population.

Nine areas of health were included in the survey—the six health promotion areas specified in Healthy People (smoking cessation, drug and alcohol abuse, nutrition, obesity, fitness, and stress management) as well as home, personal, and driver safety, heart disease and cancer screening and general education, excluding risk factors such as smoking.

The community study began with an identification of major providers of health promotion services from telephone directory listings. Additional providers were identified by nomination from community “gatekeeper” informants—the United Way and Chamber of Commerce executives, and newspaper and television news editors. Finally, each provider interviewed was asked to identify other providers in a “snowball” nomination process. Nominated providers were interviewed and queried for additional providers until no new nominations emerged, yielding a complete set of health promotion providers in each of the four communities.

All organizations identified were sent preliminary letters asking for their cooperation in the project. Interviews were conducted in person with major providers in each community. Interviews were semi-structured in character with data endpoints defined in an inventory data collection format, described by the principal author in an unpublished manuscript. This procedure allowed respondents to describe their organization’s health promotion activities in their own terms and did not force research data collection categories upon them. Inventory data was obtained from most community providers by the senior author during a one-week field trip to each community. Followup by telephone, however,

was often required to obtain complete information. Inventory data from additional providers was obtained entirely by telephone following the same procedures.

All local sponsors of programs open to the general public were surveyed, even if the target group was only a limited segment of the general public such as students or senior citizens. Programs for special populations like prison inmates, mentally handicapped, or nursing home patients were excluded. Data collection in each city took about three months, with initiation scheduled for the spring in order to take advantage of organizational annual report data available at that time for the prior calendar year.

In each community, a separate study was also conducted of all worksites with more than 100 employees as identified by a Dun and Bradstreet listing, supplemented by Minnesota business reference directories and local Chamber of Commerce information (26). Structured interviews were conducted by staff telephone interviewers with the person most knowledgeable about health promotion activity at each worksite. These interviews contained the same data endpoints as the community inventory, so that data from the two studies could be summed to yield community totals on the supply and demand indicators.

Community provider and worksite informants were asked what health promotion program options their organizations had offered in each area of health in the last fiscal year. All program options mentioned were coded in the inventory and tallied in a preliminary analysis, but only program options regarded as primary prevention were included in the final data analysis. These primary prevention program options were

1. chemical dependency classes or lectures;
2. personal, home, or driver’s safety classes or lectures;
3. quit-smoking incentives or contests, no-smoking days, lectures, classes or support groups, smoking policy restrictions;
4. weight control referrals, classes, or contests;
5. nutrition classes or lectures, improved dining alternatives;
6. fitness classes, contests, exercise space or facilities, sports teams or clubs, fitness assessment, fitness standards;
7. stress management classes or lectures;
8. heart disease classes and lectures, blood pressure and cholesterol screening;
9. cancer classes or lectures, cancer screening

Table 2. Community program options and participation per 1,000 population in nine areas of health promotion, surveys of community organizations and worksites of four midwestern cities, 1986-87

Program	Program options per 1,000					Participation per 1,000				
	Winona	St. Cloud	Eau Claire	Sioux Falls	Four-city average	Winona	St. Cloud	Eau Claire	Sioux Falls	Four-city average
Population in 1,000s.....	31.023	76.372	83.694	95.200						
Exercise.....	3.03	2.13	1.94	2.32	2.23	1,153	766	1,261	1,367	1,153
Smoking cessation.....	2.68	1.69	1.33	1.65	1.68	107	146	118	139	131
Nutrition.....	1.48	.82	.95	.85	.94	217	404	174	269	272
Heart disease education and screening.....	1.61	.55	.68	.86	.81	528	107	219	357	268
Personal, home, and driver safety.....	1.10	1.01	.41	.60	.71	245	415	213	388	329
Weight loss.....	1.10	.59	.72	.64	.70	71	148	119	146	130
Chemical dependency.....	.55	.71	.39	.41	.50	236	362	184	350	292
Stress management.....	.71	.59	.37	.47	.50	86	66	224	185	154
Cancer education and screening.....	.52	.21	.33	.36	.33	66	50	65	129	82
Total, all areas.....	12.76	8.30	7.12	8.16	8.39	2,709	2,464	2,577	3,330	2,811

Queried separately and added to program options in each area of health were

10. health fairs;
11. special promotions or events; and
12. other programs, including telephone question and answer lines, improved environmental alternatives or facilities, organizational standards, goals or policies, organizational structures—committees, networks, coalitions.

An example of the specific program options offered by a particular organization might include a weight loss contest, a nutrition lecture series, an aerobic exercise class, a health fair with cholesterol screening, and an anti-drunk driving promotion, a total of 5 program options.

Participation totals are limited to the primary prevention program options noted. These totals are tallies of registrations or attendance summed across all providers and all primary prevention program options. They are turnstile counts that may include a particular person many times, as they are screened, attend each class or lecture, and so on. Both program options and participation refer to data already documented in organizational records and reports in most cases. Coding rules were developed to render such data comparable in this data set. Initial coding was done by the interviewer, and this coding was then independently checked for consistency and completeness.

Data analysis was conducted separately for the nine areas of health in order to determine the main areas of focus in the community. In addition, we determined which kinds of community organizations were the main providers of programs, con-

ducting an analysis by community sector. The providers were combined into groups as follows: Government organizations, including local and State health, police, fire, natural resources, and agricultural extension units; medical organizations including hospitals, clinics, and health maintenance organizations; schools, including public and private schools with more than 100 students; adult education organizations and colleges; nonprofit organizations and health-related voluntary associations; commercial health promotion organizations; and the six largest churches in each community, with additions by nomination.

In the sector analysis it was necessary to eliminate duplication of programs that were cosponsored. In coding programs offered jointly, a primary sponsor was identified, based on the major source of funding for the program. Thus, the analysis of primary sponsorship by sector is based on independent programs and participation. The Statistical Analysis System (SAS) (27) was used in analyzing data.

Results

Altogether, 273 community organizations were interviewed as providers of programs in the four communities. Of the 279 community providers identified as eligible respondents, there were 6 refusals, a response rate of 97.8 percent. Of the 273 providers interviewed, 11 percent were governmental units, 10 percent were medical organizations, 25 percent were schools or colleges, 21 percent were nonprofit or voluntary organizations, 23 percent were commercial or profit-making

Table 3. Rank among nine areas of health for community program options and participation

Program	Program option rate					Participation rate				
	Winona	St. Cloud	Eau Claire	Sioux Falls	Four-city average	Winona	St. Cloud	Eau Claire	Sioux Falls	Four-city average
Exercise.....	1	1	1	1	1	1	1	1	1	1
Smoking cessation.....	2	2	2	2	2	6	6	8	8	7
Nutrition education.....	4	4	3	4	3	5	3	6	5	4
Heart disease education and screening.....	3	8	5	3	4	2	7	3	3	5
Personal, home, and driver safety.....	5.5	3	6	6	5	3	2	4	2	2
Weight loss.....	5.5	6.5	4	5	6	8	5	7	7	8
Chemical dependency.....	8	5	7	8	7.5	4	4	5	4	3
Stress management.....	7	6.5	8	7	7.5	7	8	2	6	6
Cancer education and screening.....	9	9	9	9	9	9	9	9	9	9

health promotion organizations, and 10 percent were churches. In addition to these providers, there were 209 worksite interviews in these communities, with a completion rate of 96 percent (26).

Most aspects of delivering health promotion services were found to vary by community population. The larger the city, the greater the health promotion activity. Therefore, communities are arrayed by size, and community rates were calculated for program options and participation. In calculating rates for the two smaller cities, population was derived from county and township population totals in the Minnesota State Demographer's Report (28). For the two larger cities, totals for the 1980 Standard Metropolitan Statistical Area (29) were adjusted after consultation with State planning agencies.

Table 2 shows the community rates of primary prevention program options and participation. Also, we have calculated four-city averages to be able to comment on general trends. The rates shown were calculated by taking the total health promotion program options in a community and dividing by the population in thousands. For example, Winona providers had 94 exercise program options in 1986, divided by its population of 31,023 (31.023 in thousands), yielded the rate shown of 3.03. For the participation indicator, exercise registrations were totalled across all program options for all providers surveyed for a total of 35,770, divided by the population in thousands (31.023), yielding the participation rate of 1,153.

Table 3 ranks the nine areas of health from highest to lowest for the four communities individually and combined. This ranking permits an assessment of priorities in health promotion program offerings.

In program option rates, differences among communities are substantial, with Winona, the smallest

community, having the highest rates for all nine areas of health. The rankings of program option rates for the nine health categories, however, are quite similar among the communities. Exercise has the most program options in all communities, and smoking cessation ranks next. Cancer education and screening program option rates rank lowest in all communities (the program options do not include those focusing on risk factors, such as smoking or nutrition.)

There are minor variations in community rankings among the other health areas, but the major deviation is in St. Cloud, where chemical dependency and home, personal, and driver's safety program options rank higher and heart disease education and screening ranks lower than in other communities. In general, the areas of heart disease risk factors (exercise, smoking, nutrition education, and heart disease education and screening) rank highest in program options.

Turning to the demand side of health promotion, the community variation in total program participation is small when we calculate rates based on population size (table 2). The total participation rate for three of the communities is very similar, with Sioux Falls showing substantially higher levels.

There is substantial variation among communities in particular areas of health, however. Compared to the other communities, Eau Claire shows higher participation in nutrition and safety; Winona shows higher participation in heart disease education and screening; Sioux Falls shows higher participation in both heart disease and cancer education and screening.

In ranking participation rates, exercise leads the nine areas of health followed by home, personal, and driver's safety, and chemical dependency (table 3). Nutrition programs and heart disease education and screening programs show similar participation

levels, but there is much variation among the communities in these areas. Stress management and weight loss programs trail, with participation in cancer education and screening at the lowest level.

Chemical dependency ranks low in program option rates but higher in participation. In contrast, smoking cessation ranks high in program options rates and lower in participation.

While total participation rates are similar, there is substantial variation among communities in particular areas of health. Compared to the other communities, Eau Claire shows higher participation in stress management programs; St. Cloud shows higher participation in weight loss; Winona and Sioux Falls show higher participation in heart disease education and screening (table 3).

What organizations are the major providers of programs in the four communities and which of those account for the most participation (table 4)? When duplication of sponsorship is eliminated by tallying programs and participation only for the organization that bears the major costs, we find that worksites provide the largest share of program options, accounting for more than 40 percent of the community totals. In participation, schools and colleges account for the largest share (41 percent).

Data were not tallied separately for adult and youth educational organizations in all four cities. However, this separation was made in 1987 for Eau Claire and Sioux Falls, resulting in an estimate for adult education and colleges of 6 percent of all community program options and 13 percent of all participation. Primary and secondary schools accounted for 7 percent of program options and 28 percent of participation (each grade level health education curriculum in any school district was counted as a program option.)

Discussion

These findings point to the major role played by worksites in providing health promotion opportunities to adults. Our results show that worksites account for about 40 percent of all community program options, and this estimate is undoubtedly conservative since only large employers were interviewed in these communities. Because participation is limited to eligible employees, worksites account for a much larger share of program options than participation. Government organizations (health, police, fire, agricultural extension units) and schools account for a larger share of participation than program options in communities because health promotion curricula, such as classes and

Table 4. Primary sponsorship of health promotion programs by community sector, four midwest cities, 1986-87

Sponsor	Programs		Participation	
	Number	Percent	Number	Percent
Government units ..	161	7	129,388	16
Medical organizations	232	10	85,657	11
Schools	56	23	333,287	41
Nonprofit organizations	208	9	138,575	17
Commercial health promotion organizations	179	7	46,955	6
Churches	79	3	6,203	1
Worksites	980	41	64,859	8
Total	2,403	100	804,909	100

lectures, are typically given to captive audiences of students and club members. Medical organizations would be accorded a larger role if co-sponsorship had been taken into account. Medical organizations (hospitals, clinics, health promotion organizations) typically provide health promotion services for worksites, but worksites bear the financial burden and are therefore categorized as primary sponsors. Thus, the share of programs and participation for medical organizations is relatively small when considering only their offerings as primary sponsors where they bear the financial burden or risk of health promotion programming.

That there are differences in the area of health focus among the four communities is hardly surprising. The commonality in emphasis on exercise, however, suggests there has been generally successful implementation of these healthy lifestyle programs. To the extent that these communities are typical of the nation, we may infer that exercise has been our greatest health promotion success to date. The fact that exercise programs have been successfully implemented in many organizational settings, however, does not imply that individual persons have been successful in maintaining an exercise regimen in their daily lives (30).

When we add community totals to the worksite totals in our study, the priorities among areas of health place the highest emphasis on exercise. In contrast, the national worksite survey (31,32) reported highest prevalence at worksites of smoking control activities (35.6 percent of the worksites involved), of health risk assessment (29.5 percent), back care (28.6 percent), and stress management (26.6 percent) compared with exercise activities (22.1 percent). While these national worksite data indicate organizational involvement of any type

(prevalence) rather than number of programs, the priorities are clearly different. Unfortunately, the categorizing of areas of health in our study was similar but not identical with the national worksite survey. However, the present study stands alone in placing worksites in a community context, and it does allow a tentative conclusion that exercise is more important in health promotion on a community basis than at worksites, while smoking control is somewhat less important.

Finally, we note that the method used in this study allows community-wide characterization of the delivery of health promotion services, permitting comparison across communities or tracking of one community over time. The method may have promise in community assessment or in the evaluation of community interventions (33). The validity of findings based on these procedures cannot be determined in the absence of other community-wide assessments. It is worth noting, however, that the worksite portion of this survey (26) replicated earlier findings on the significance of organization size. Furthermore, the level of worksite involvement in offering any health promotion activities that we observed is consistent with national survey results on prevalence (31,32).

In this study, four midsize cities in the Midwest showed similar rankings on health promotion program options and participation, indicating that priorities have been established that favor exercise within the context of health promotion. A change in these priorities would require a shift away from the current natural process of development of health promotion in the region.

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Shigellosis from Swimming in a Park Pond in Michigan

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Synopsis

In July 1989 an outbreak of shigellosis occurred among visitors to a recreational park in Oakland County, MI. An epidemiologic investigation discovered an association between illness and swimming in a pond at the park, especially for those who had put their head underwater. No other factors were epidemiologically incriminated. A total of 65 cases were identified; nine were culture confirmed, all Shigella sonnei.

Several water samples evaluated for fecal coliform counts shortly after the outbreak were found satisfactory. Cultures of water samples were negative for Shigella species. Inspection of the park's sewage disposal and toilet facilities found all equipment in proper working condition and no evidence of a sewage contamination event from these potential sources. No other commercial or residential sources of potential sewage contamination existed near the pond.

Investigators concluded that Shigella contamination of the pond by a swimmer or swimmers on one or more occasions was a strong possibility. Factors supporting this conclusion included elevated incidence of S. sonnei in the community during the 2 months prior to the outbreak, greater use of the pond, warm water and air temperatures, and inadequate water exchange in the pond.

This report adds one of the few documented outbreaks of shigellosis implicating bather contamination to the literature on the growing number of incidents that have been associated with recreational use of water.

ON JULY 14, 1989, infection control staff members at a hospital in Pontiac, MI, reported to the Oakland County Health Division the occurrence of several cases of acute gastroenteritis among patients and workers at an adolescent psychiatric facility affiliated with the hospital. The four stricken persons were part of a small group from the facility who had taken a field trip to a county park 3 days earlier. Three were seen in the emergency room and hospitalized; one was seen by a private physician.

Field trip activities had included a nature walk, lunch, and swimming in a pond at the park. Four other persons from the field trip group were not ill. There were no reports of gastroenteritis among other patients or staff members at the facility.

During the next two days, the county health division received additional reports of illness from persons who had visited the park. Meanwhile, a bacterial culture analysis of stool specimens from the three hospitalized children showed positive growth of *Shigella sonnei*.